



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/706,992	11/14/2003	Masatoyo Sogabe	392.1838	7359

21171 7590 05/06/2005
STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

PHAM, LEDA T

ART UNIT PAPER NUMBER

2834

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/706,992

Applicant(s)

SOGABE ET AL.

Examiner

Leda T. Pham

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. This office action is in response to amendment filed on 2/7/05.
2. Claims 1 – 9 are presented for examination.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1 – 2, 6 are rejected under 35 U.S.C. 102(b) as being anticipated by Overton (U.S. Patent No. 5,051,634).

Referring to claim 1, Overton teaches an electric motor (figure 1) comprising: a stator core (30) having main teeth (32) and auxiliary teeth (36), each of the auxiliary teeth being formed in a slot between adjacent ones of the main teeth (32), and coils (35) respectively formed around said main teeth with said auxiliary teeth intervening adjacent ones of said coils.

Referring to claim 2, Overton teaches the electric motor wherein each of said auxiliary teeth (36) have a shape such as to fill a gap between the adjacent ones of said coils (35, figure 1).

Referring to claim 6, Overton teaches the electric motor wherein said stator core (30) have a cylindrical shape to constitute a rotary motor (lines 16 – 17, column 1).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 2834

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3 – 5, 7 – 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Overton in view of Ohto et al. (U.S. Patent 6,831,379 B2).

Referring to claims 3 – 5, and claims 8 - 9, Overton teaches the claimed invention, except for the added limitation of a torque and/or a cogging amount of the electric motor are adjusted by setting of lengths of the auxiliary teeth.

Ohto teaches a stator core having main teeth (4b), and auxiliary teeth (6) wherein a cogging amount of the electric motor are adjusted by setting of lengths of the auxiliary teeth (figure 3) for reducing cogging thrust in a motor.

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to set the lengths of auxiliary teeth for adjusting cogging amount of the electric motor as taught by Ohto. Doing would a high-performance motor that has a reduced cogging thrust.

Referring to claims 4 and 8, Ohto teaches the lengths of said auxiliary teeth (6) are set to be maximum values not greater than lengths of said main teeth (4b) and with which the electric motor has a cogging amount within an allowable amount (figure 3, when the length of auxiliary teeth H_d is close to the length of main teeth H_t , $H_d/H_t \leq 1$, the cogging F is reducing in allowable amount).

Referring to claims 5 and 9, Ohto teaches the lengths of said auxiliary teeth (6) are set to be maximum values not greater than lengths of said main teeth (4b) and with which the electric

Art Unit: 2834

motor has a minimum cogging amount (figure 3, when the length of auxiliary teeth Hd is close to the length of main teaches Ht, $Hd/Ht = 0.5$, the cogging F is close to zero).

Referring to claim 7, Ohto teaches the electric motor wherein said stator core (4) have a straight shape to constitute a linear motor (figure 1).

Response to Arguments

7. Applicant's arguments with respect to claims 1 - 7 have been considered but are moot in view of the new ground(s) of rejection.

8. The indicated allowability of dependent claims 4 – 5 is withdrawn in view of the newly discovered reference(s) to Ohto. Rejections based on the newly cited reference(s) follow.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Art Unit: 2834

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leda T. Pham whose telephone number is (571) 272-2032. The examiner can normally be reached on M-F (8:30-6:00) first Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Darren Schuberg can be reached on (571) 272-2044. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Leda T. Pham
Examiner
Art Unit 2834



TRAN NGUYEN
PRIMARY EXAMINER

LTP
April 30, 2005